

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) ~~Improved~~ A method for production of a rotor (10) of a centrifugal compressor, ~~wherein the said rotor (10) is produced from a monolithic disc; characterised in that the~~ comprising: working said disc is worked in a first radial direction by at least one tool (20) of a numerical control machine, such as to remove shavings; so as and to thereby produce partial radial cavities (12) in the said rotor (10); and

working each disc in a second radial direction by at least one other tool of a numerical control machine such as to remove shavings and thereby produce complete radial cavities.

2. (Currently Amended) ~~Improved~~ A method according to claim 1, ~~characterised in that a~~ wherein said first tool (20) works, starting from an outer diameter of the said disc, until an said outer portion of the said partial radial cavity (12) is cavities are produced.

3. (Currently Amended) ~~Improved~~ A method according to claim 2, ~~characterised in that the~~ wherein said first tool (20) advances with successive terracing operations, and works until an intermediate depth is reached relative to an overall width of a circular ring of the said monolithic disc.

4. (Currently Amended) ~~Improved~~ A method according to claim 3, ~~characterised in that a~~ wherein said second tool (20) works, starting from an inner diameter of the said disc, until it reaches the said outer cavity, thus completing the said radial cavity (12) partial cavities.

5. (Currently Amended) ~~Improved~~ A method according to claim 4, ~~characterised in that the~~ wherein said first tool (20) and the said second tool (20) are the same tool (20) of the said numerical control machine.

6. (Currently Amended) ~~Improved~~ A method according to claim 4, ~~characterised in that the~~ wherein said first tool (20) and the said second tool (20) work simultaneously, the said tools (20) being arranged on two axes which are controlled by at least one numerical control machine.

7. (Currently Amended) ~~Improved~~ A method according to claim 1, ~~characterised in that a~~ wherein said second tool (20) works from an inner diameter of the said disc, until an inner portions of the said radial cavity (12) ~~is~~ cavities are produced.

8. (Currently Amended) ~~Improved~~ A method according to claim 7, ~~characterised in that~~ wherein the said second tool (20) advances with successive terracing operations and works until an intermediate depth is reached relative to an overall width of a circular ring of the said monolithic disc.

9. (Currently Amended) ~~Improved~~ A method according to claim 8, ~~characterised in that a~~ wherein said first tool (20) works starting from an outer diameter of the said disc, until it reaches the said inner cavity portions of said cavities, thus completing the said radial cavity (12) cavities.

10. (Currently Amended) ~~Improved~~ A method according to claim 9, ~~characterised in that the~~ wherein said first tool (20) and the said second tool (20) are the same tool (20) of the said numerical control machine.

11. (Currently Amended) ~~Improved~~ A method according to claim 6, ~~characterised in that,~~ wherein before working with the said tools (20), a preliminary stage is activated in order to ~~determine the feasibility of the working, i.e. to ascertain whether there will be superimpositions of the said~~ first and second tools (20) during working.

12. (Currently Amended) ~~Improved~~ A method according to claim 11, characterised in that, ~~if there are~~ wherein in the event of superimpositions, an abnormality is indicated, and this ~~interrupts~~ interrupting a working programme of the numeral control machine.

13. (Currently Amended) ~~Improved~~ A method according to claim 1, characterised in that wherein said first and second tools (20) are used in succession, starting with the shortest ~~from amongst those available~~ in length.

14. (Currently Amended) ~~Improved~~ A method according to claim 1, characterised in that wherein said first tool comprises a blade, and a diameter of the said first tool (20) is selected according to a radius of connection at the base of the blade.

15. (Canceled)

16. (Currently Amended) ~~Improved~~ A method according to claim 15, characterised in that, 1 wherein after a first stage of so-called pocketing, which is removing shavings is carried out with a single inclination of the an axis of the said tool (20) until a maximum depth is reached, also using the possibility of working with an undercut owing to the design of the said tool (20), a command is transmitted to the axis to take the said tool (20) to a different inclination.

17. (Currently Amended) ~~Improved~~ A method according to claim 16, characterised in that the said different inclination is implemented by a numerical control machine which has five controlled axes.

18. (Currently Amended) ~~Improved~~ A method according to claim 1, characterised in that, wherein after the said working to remove shavings, the said rotor (10) is subjected to heat treatment.

19. (Currently Amended) ~~Improved~~ A method according to claim 18, characterised in that the wherein said heat treatment is followed by stages of checking of the dimensions, balancing, and dynamic checking of the said rotor ~~(10)~~.

20. (Currently Amended) ~~Improved~~ A method according to claim 1, characterised in that the wherein said rotor ~~(10)~~ is made of steel.

21. (Canceled)